

## A NEW ASTROCONUS FROM SOUTH AUSTRALIA

By H. LYMAN CLARK, MUSEUM OF COMPARATIVE ZOOLOGY, CAMBRIDGE, MASS., U.S.A.

### Plate xviii.

THANKS to the kindness of the Director of the South Australian Museum, I have had the privilege of studying a very remarkable "basket star" (Gorgonocephalid) of the genus *Astroconus*. The specimen is exceptionally well preserved and very handsomely coloured, and hence quite different in appearance from any other specimen of the genus I have ever seen.

#### ASTROCONUS PULCHER sp. nov.

Disk 35 mm. in diameter, with five arms, exceeding 125 mm. in length, forking at least seven or eight times; width of arms at base 10 mm., height 6 mm.; disk distorted by drying; in life it was undoubtedly more or less swollen with the radial and interradial areas about equal; in its dry condition the radial ridges are elevated, the interradial areas much sunken; radial shields distally widely separated from each other, space between considerably depressed. The shrinkage of the disk causes the inner ends of the radial ridges to overlap in an irregular manner laterally, making it impossible to see the actual centre of the disk. Relatively large wrinkled, conical tubercles, 1 to 2 mm. high and nearly as thick at base, are scattered sparsely over the disk, chiefly at the distal ends of the radial shields. The covering of the disk is made up of crowded granules and plates as in typical *Astroconus*. Beginning at the very base, the arms are covered by tubercled transverse ridges all the way from the radial shields to the tips, the ridges separated from each other by slightly depressed areas without tubercles; if it were not for their distinctive colouration they would be much less defined and difficult to make out. Covering of arms, ridges, and valleys similar, made up of granules and small smooth plates as on disk. Each ridge to the third or fourth fork of the arm carries blunt, conical tubercles like those on the disk but distinctly smaller; occasionally there may be only one on a ridge, or very rarely none, usually two, three, or four, very rarely five. On the outer branches of the arms tubercles are wanting.

Entire lower surface covered by a fine granular coat, coarsest in the interradial areas. Tentacle spores small, but the first pair well within the disk and lacking any tentacle scale, appear to open at the tip of a more or less calcified papilla which has shrunken on drying into a minute shapeless heap. Each succeeding

spore more or less concealed by a slight ridge on the adoral side, which carries three, four, five, or even six short, thick, slightly flattened spines, terminating in a cluster of 3-5 short but sharp glassy thorns; the ridges themselves merge into the tubercled ridges of the sides and upper surfaces of the arms. Each mouth angle carries a large number of teeth and oral papillae of diverse sizes, arranged irregularly on the sides and angle of the jaw. Genital slits conspicuous, 5 mm. long, placed near the arm but distinctly separated from it. Madreporic plate single, well defined, close to the mouth frame in one interradial area.

Colour: above, a light ashy-grey with a purplish tinge; disk with numerous spots and irregular slender brownish-black lines; arms with the ridges light ashy-grey, the depressed areas between brownish-black in sharp contrast; the large tubercles are ashy, but many have the tips more or less dusky. The annulation of the small branches of the arms is very handsome. Lower surface pale-buff or cream colour; on the interradial areas are numerous irregular lines and spots of brownish-black; the mouth-frame and the lower surface of the arms is prettily marked with numerous spots and small blotches of brownish-black. Arm spines lemon-yellow in marked contrast. Oral papillae and teeth pale orange.

Holotype. South Australian Museum Coll. No. K.561.

This very handsome, and at present unique, specimen was taken in a crayfish pot, in 20 fathoms of water, at Cape Dutton, South Australia, by Mr. K. Mattson. Aside from its colouration there is little to distinguish it from *australis*, but the regular "ringing" of the arms is unlike any specimen of that species which I have seen (71 in all). It is hard to say, however, how much the validity of this character is affected by its close association with colour in the new species. Only observation of a good series of living or well-preserved specimens can determine the true status of *pulcher*. Comparison with specimens of *australis*, of which no two specimens seem to be exactly alike, showed that it was very close to some specimens of that species. It is distinguished at once from *occidentalis*, the only other *Astroconus* as yet described, by the fact that the well marked transverse ridges which encircle the upper surface and sides of the arms carry but few tubercles (2-5), and these are relatively large and irregularly arranged.

As regards its relationship to *australis*, it may be only a colour form or extreme variety, but after considerable study it seems best to treat it as a distinct species, and I therefore have ventured to describe it as such, giving it the name of *pulcher*, because of its beauty.